

REMARKS

35 U.S.C. § 102 Rejections

The Examiner has rejected claims 1, 2, 8-13 and 15 under 35 U.S.C. § 102(e) as being anticipated by Lofland.

Claim 1 has been amended to include recessed areas of different depths on at least one of the heat dissipating devices to thermally couple with electronic components of different heights. Specifically, claim 1 includes the limitation “at least one of the heat dissipating devices having recessed areas of different depths to thermally couple with electronic components of different heights.”

Lofland does not disclose recessed areas of different depths on at least one of the heat dissipating devices to thermally couple with electronic components of different heights.

Lofland discloses an electronic card that includes an integrated circuit which is coupled to a substrate. The substrate 12 may be a printed circuit board which has surface pads, routing traces, and power/ground planes, that interconnects the integrated circuits 20 to each other and to a plurality of contact pads 22 (Column 2, lines 20-23). The card may include a first thermally conductive cover 24 located on the first side 14 of the substrate 12 and a second thermally conductive cover 26 that is located on the second side 16 of the substrate 12. The covers 24 and 26 are thermally coupled to the packages 18 so that heat flows from the integrated circuits 20 and into the covers 24 and 26. The first 24 and second 26 covers may be thermally coupled to the integrated circuit packages 18 by placing the covers 24 and

26 into direct contact with the outer top surfaces of the packages 18. The first 24 and second 26 covers are preferably constructed from a thermally conductive material such as aluminum or copper so that heat flows throughout the covers 24 and 26 (Column 2, lines 30-42). As shown in Figure 7, the covers 24 and 26 may have dimpled portions 42 and 44 that are welded together (Column 3, lines 3-5). Figures 2 through 8 show alternative methods for attaching the covers 24 and 26. As shown in Figure 7, the dimpled portions 42 and 44 that are welded together are of a minimal length as compared to the entire length of the covers 24 and 26 and are only welded together to connect the first cover 24 to the second cover 26. Lofland thus discloses an electronic card having a printed circuit board and two thermally conductive covers on opposing sides thereof, which have small portions welded together to connect them around the printed circuit board. Specifically, Lofland does not disclose recessed areas of different depths on at least one of the heat dissipating devices to thermally couple with electronic components of different heights.

Therefore, claim 1 is not anticipated by Lofland because claim 1 includes a limitation not disclosed in Lofland. Furthermore, the amendment to claim 1 is in accordance with the Examiner's indication that claim 14 contains allowable subject matter if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

Claims 2-4, 6-13, 15, and 16 are dependent on claim 1 and should be allowable for the same reasons as claim 1.

Applicant, accordingly, respectfully requests withdrawal of the rejections of claims 1, 2, 8-13 and 15 under 35 U.S.C. § 102(e) as being anticipated by Lofland.

35 U.S.C. § 103 Rejections

The Examiner has rejected claim 19 under 35 U.S.C. § 103(a) as being unpatentable over either Prasanna or French reference 2803166.

Applicant has discovered that the invention of French reference 2803166 is described in U.S. Patent Application No. U.S. 2002/0172010 and has used the U.S. application in preparing this response. Applicant believes that the U.S. application is cumulative with French reference 2803166, and, therefore, is not submitting an IDS for this piece of prior art.

Claim 19 has been amended to include a portion of one of the heat dissipating devices contacting the other heat dissipating device to form a thermally conductive coupling member with a length of at least 17 percent of the length of one of the heat dissipating devices. Specifically, claim 19 includes limitation “the thermally conductive coupling member having a portion integral with at least one of the heat dissipating devices in being adjacent to the other heat dissipating device, the thermally conductive coupling member having a length being at least 17 per cent of a length of one of the heat dissipating devices.”

Prasanna and French reference 2803166 do not teach or suggest a portion of one of the heat dissipating devices contacting the other heat dissipating device to

form a thermally conductive coupling member with a length of at least 17 percent of the length of one of the heat dissipating devices.

Prasanna does not teach or suggest a portion of one of the heat dissipating devices contacting the other heat dissipating device to form a thermally conductive coupling member with a length of at least 17 percent of the length of one of the heat dissipating devices. Prasanna discloses a memory cartridge 10. The memory cartridge 10 includes a memory card 12, an upper thermally conductive cover 14, and a lower thermally conductive cover 16 (Column 2, lines 51-53). The memory card 12 includes a substrate 18, an upper set of memory dies 20, and a lower set of memory dies 22 (Column 2, lines 60-62). The substrate may include a metal layer 64 which serves as a ground for the memory dies 20 and 22 (Column 5, lines 11-33). Metal plug vias 66 are formed in the substrate, each being in contact with the metal layer 64 (Column 5, lines 16-19). Each thermally conductive cover 14 and 16 is in contact with a respective contact pad 68 and is electrically connected to the metal layer 64 (Column 5, lines 22-24). Specifically, Prasanna does not teach or suggest a portion of one of the heat dissipating devices contacting the other heat dissipating device to form a thermally conductive coupling member.

French reference 2803166 does not teach or suggest a portion of one of the heat dissipating devices contacting the other heat dissipating device to form a thermally conductive coupling member with a length of at least 17 percent of the length of one of the heat dissipating devices. French reference 2803166 teaches an electronic module 2e comprising two covers 18 and 19 with a printed circuit board

15 placed in a space between the two covers 18 and 19 (Paragraph 0010 of US Patent Application No. U.S. 2002/0172010). The printed circuit board 15 includes at least one component 22 (Paragraph 0011). Ends of the covers 18 and 19 are placed within slideways 9 and 9a, to which heat is conducted (Paragraph 0014). French reference 2803166 thus also fails to teach or suggest a portion of one of the heat dissipating devices contacting the other heat dissipating device to form a thermally conductive coupling member.

Therefore, claim 19 is patentable over Prasanna and French reference 2803166 because claim 19 includes a limitation neither taught nor suggested by either Prasanna or French reference 2803166.

Applicant, accordingly, respectfully requests withdrawal of the rejection of claim 19 under 35 U.S.C. § 103(a) as being unpatentable over either Prasanna or French reference 2803166.

ALLOWABLE CLAIMS

Applicant has noted that the Examiner indicated that claims 3, 4, 6, 7, 14, 16, 18, 20, 21, and 23-26 are objected to and is assuming, with appreciation that those claims contain allowable subject matter if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. In view of these amendments, Applicant respectfully submits that claims 1-4, 6-13, 15, 16, 18-21, 23-26, and 31-33 are now in condition for allowance and request allowance for said claims.

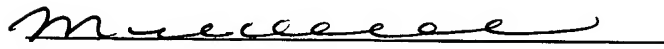
Applicant respectfully submits that the present application is in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Michael A. Bernadicou at (408) 720-8300.

Pursuant to 37 C.F.R. 1.136(a)(3), applicant(s) hereby request and authorize the U.S. Patent and Trademark Office to (1) treat any concurrent or future reply that requires a petition for extension of time as incorporating a petition for extension of time for the appropriate length of time and (2) charge all required fees, including extension of time fees and fees under 37 C.F.R. 1.16 and 1.17, to Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: September 10, 2003

A handwritten signature in dark ink, appearing to read "Michael A. Bernadicou", written over a horizontal line.

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